

What Is Claimed Is:

1. An image sensing apparatus connected to an external image processing apparatus comprising:

5 image sensing means for sensing an object and outputting an image signal;

communication means for transmitting the image signal and identification information on said image sensing means multiplexed in a blanking period of the 10 image signal to the image processing apparatus as well as communicating with the image processing apparatus; and

control means for controlling said image sensing means and a communication mode of said communication 15 means in accordance with driving signals, transmitted from the image processing apparatus, which corresponds to the communication mode,

wherein said communication means multiplexes the image signal and the identification information in 20 accordance with the communication mode controlled by said control means.

2. The image sensing apparatus according to claim 1, wherein the identification information at least 25 includes a number of pixels or a video rate of said image sensing means.

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3. The image sensing apparatus according to claim
1, wherein said control means controls said
communication means set to a predetermined communication
5 mode in an initial state, and said communication means
transmits the identification information multiplexed in
the blanking period of the image signal under the
initial state, then said control means changes the
predetermined communication mode set in said
10 communication means if the predetermined mode does not
conform to said image sensing means.

4. The image sensing apparatus according to claim
1 further comprising muting means for muting a signal
15 level of the image signal obtained by said image sensing
means and outputting the muted signals to said
communication means.

5. The image sensing apparatus according to claim
20 1, wherein said control means controls said
communication means set to a communication mode
corresponding to a type of said image sensing means in
an initial state, and said communication means transmits
a signal responding to a request signal transmitted from
25 the image processing apparatus as the identification
information multiplexed in the blanking period of the

image signal under the initial state, then said control means controls said image sensing means in accordance with a driving signals corresponding to the communication mode.

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6. The image sensing apparatus according to claim 1, wherein said communication means communicates in a vertical interval data signal method.

10 7. The image sensing apparatus according to claim 1, wherein the driving signals includes a synchronizing signal and a clock signal.

15 8. The image sensing apparatus according to claim 1, wherein at least a position or an amount of information to be multiplexed in the image signal is changed in accordance with the communication mode.

20 9. An image processing apparatus which processes an image signal transmitted from an image sensing apparatus, comprising:

25 communication means for receiving the image signal and identification information multiplexed in a blanking period of the image signal from the image sensing apparatus and communicating with the image sensing apparatus;

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driving signals generation means capable of generating plural kinds of driving signals for driving the image sensing apparatus; "

signal processing means for processing the image
5 signal in a signal processing method corresponding to a communication mode; and
control means for controlling the communication mode of said communication means and said driving signals generation means in accordance with the
10 identification information.

10. The image processing apparatus according to claim 9, wherein the identification information at least includes a number of pixels or a video rate of the image
15 sensing apparatus

11. The image processing apparatus according to claim 9, wherein said control means controls said communication means set to a predetermined communication mode in an initial state, changes the communication mode in accordance with the identification information received under the initial state if the identification information indicates a communication mode different from the predetermined communication mode, and controls
20 said driving signals generation means to generate and
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send a specific type of the driving signals selected in accordance with the identification information.

12. The image processing apparatus according to
5 claim 9, wherein said control means sequentially changes communication modes of said communication means in an initial state, controls said driving signals generation means to sequentially generate and output plural kinds of driving signals corresponding to the communication
10 modes as the communication mode is changed, and transmits a request signal each time the communication mode is changed, and when the identification information corresponding to the request signal is transmitted, said control means controls to fix the communication mode and
15 the driving signals set when the identification information is received.

13. The image processing apparatus according to
claim 9, wherein said communication means communicates
20 in a vertical interval data signal method.

14. The image processing apparatus according to
claim 9, wherein the driving signals includes a synchronizing signal and a clock signal.

15. The image processing apparatus according to
claim 9, wherein at least a position or an amount of
information to be multiplexed in the driving signals is
changed in accordance with the communication mode.

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16. An image sensing system having an image
sensing apparatus and an image processing apparatus, and
said image sensing apparatus comprising:

image sensing means for sensing an object and
10 outputting an image signal;

first communication means for transmitting the
image signal and identification information on said
image sensing means multiplexed in a blanking period of
the image signal to said image processing apparatus as
15 well as communicating with said image processing
apparatus; and

first control means for controlling said image
sensing means and a communication mode of said first
communication means and controlling said image sensing
20 means and said first communication means in accordance
with a driving signals, transmitted from said image
processing apparatus, which corresponds to the
communication mode, and

said image processing apparatus comprising:
25 second communication means for receiving the image
signal and the identification information multiplexed in

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the blanking period of the image signal from said image sensing apparatus and communicating with said image sensing apparatus;

- driving signals generation means capable of
5 generating plural kinds of driving signals for driving
said image sensing apparatus;

signal processing means for processing the image signal in a signal processing method corresponding to the communication mode; and

- 10 second control means for controlling the communication mode of said second communication means and said driving signals generation means in accordance with the identification information,

- wherein said first communication means multiplexes
15 the image signal and the identification information in accordance with the communication mode controlled by said first control means.

17. The image sensing system according to claim 16,
20 wherein the identification information at least includes a number of pixels or a video rate of said image sensing means.

18. The image sensing system according to claim 16,
25 wherein said first and second control means control said first and second communication means to be set to a

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predetermined communication mode in an initial state, and said first communication means transmits the identification information multiplexed in the blanking period of the image signal, then said first control

- 5 means changes the predetermined communication mode set in said first communication means if the predetermined mode does not conform to said image sensing means, and said second control means changes the communication mode set in said second communication means in accordance
- 10 with the identification information if the identification information indicates a communication mode different from the predetermined communication mode, and controls said driving signals generation means to generate and send a specific type of the driving signals
- 15 selected in accordance with the identification information

19. The image sensing system according to claim 16 further comprising muting means for muting a signal

- 20 level of the image signal obtained by said image sensing means and outputting the muted signals to said first communication means.

20. The image sensing system according to claim 16,
- 25 wherein said first control means controls said first communication means set to a communication mode

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corresponding to a type of said image sensing means in an initial state, said second control means sequentially changes communication modes of said second communication means in the initial state, controls said driving

- 5 signals generation means to sequentially generate and output plural kinds of driving signals corresponding to the communication modes as the communication mode is changed, and transmits a request signal each time the communication mode is changed, and when said first
- 10 communication means transmits a signal responding to the request signal transmitted from said image processing apparatus as the identification information multiplexed in the blanking period of the image signal when the request signal is received, then said second control
- 15 means controls to fix the communication mode and the driving signals set when the identification information is received.

21. The image sensing system according to claim 16,
20 wherein said first and second communication means communicate in a vertical interval data signal method.

22. The image sensing system according to claim 16,
wherein the driving signals includes a synchronizing
25 signal and a clock signal.

23. The image sensing system according to claim 16,
wherein said first communication means changes at least
a position or an amount of information to be multiplexed
in the image signal in accordance with the communication
5 mode.

24. The image sensing system according to claim 16,
wherein said second communication means changes at least
a position or an amount of information to be multiplexed
10 in the image signal in accordance with the communication
mode.

25. A method for controlling an image sensing
apparatus connected to an external image processing
15 apparatus, comprising the steps of:
 setting a communication mode;
 transmitting an image signal and identification
 information on image sensing means multiplexed in a
 blanking period of the image signal to the image
20 processing apparatus in the set communication mode;
 changing the set communication mode if the
 predetermined mode does not conform to the image sensing
 means; and
 performing image sensing in accordance with a
25 driving signals, transmitted from the image processing
 apparatus, which corresponds to the communication mode.

26. A method of controlling an image processing apparatus which processes an image signal transmitted from an image sensing apparatus, comprising the steps
5 of:

- setting a communication mode;
- receiving an image signal and identification information multiplexed in a blanking period of the image signal from the image sensing apparatus in the set
10 communication mode;
- generating a driving signals corresponding to the set communication mode for driving the image sensing apparatus;
- changing the set communication mode if necessary;
15 changing the driving signals to a driving signals corresponding to the communication mode if the communication mode is changed; and
- processing the image signal in a signal processing method corresponding to the communication mode in which
20 the image signal is received.

27. A method for controlling an image sensing system having an image sensing apparatus and an image processing apparatus, comprising the steps of:

- 25 setting a communication mode;

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generating a driving signals corresponding to the set communication mode for driving the image sensing apparatus;

- transmitting an image signal and identification information on image sensing means multiplexed in a blanking period of the image signal to the image processing apparatus in the set communication mode from the image sensing apparatus to the image processing apparatus;
- 10 receiving the image signal and the identification information sent from the image sensing apparatus in the image processing apparatus in the set communication mode;
- changing the set communication mode if necessary;
- 15 changing the driving signals to a driving signals corresponding to the communication mode if the communication mode is changed;
- performing image sensing in the image sensing apparatus in accordance with the driving signals,
- 20 transmitted from the image processing apparatus, which corresponds to the communication mode; and
- processing the image signal in the image processing apparatus in a signal processing method corresponding to the communication mode.

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28. An image processing apparatus comprising:

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connector means capable of connecting to one of a plurality of image sensing apparatuses;

signal processing means capable of performing a plurality of different signal processing operations in correspondence with the plurality of image sensing apparatuses;

means for selectively connecting one of the plurality of image sensing apparatuses to said signal processing means; and

control means for controlling said signal processing means to perform one of signal processing operations corresponding to an attribute of an image sensing apparatus connected to the connector means.

29. The image processing apparatus according to claim 28, wherein the image processing apparatus is connected to an external information processing apparatus, and in a case where an image sensing apparatus is connected, obtains the attribute of the image sensing apparatus and transmits the obtained attribute to the information processing apparatus.

30. The image processing apparatus according to claim 28, wherein the image processing apparatus is connected to an external information processing apparatus, and said control means controls said signal

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processing means to perform signal processing corresponding to an attribute designated by the information processing apparatus.

5 31. The image processing apparatus according to claim 28 further comprising memory means for storing attributes of image sensing apparatuses connected to said connector means.

10 32. The image processing apparatus according to claim 28, wherein the attribute at least includes a number of pixels or a video rate of said image sensing means.

15 33. An image processing method using an image processing apparatus having a plurality of connectors capable of connecting to a plurality of image sensing apparatuses, said method comprising the steps of:

20 connecting one of said plurality of connectors to image processing apparatus;

 setting a signal processing corresponding to an image sensing apparatus connected to the connected connector;

25 inputting an image signal from the image sensing apparatus to the image processing apparatus; and

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performing the signal processing set at said setting step on the input image signal.

34. An image processing method using an image 5 processing apparatus having a plurality of connectors capable of connecting to a plurality of image sensing apparatuses, said method comprising the steps of:

- sequentially connecting the plurality of connectors to the image processing apparatus;
- 10 determining whether an image sensing apparatus is connected to or not to each of the plurality of connectors;
- obtaining an attribute of the image sensing apparatus and storing the attribute in correspondence 15 with the connector to which the image sensing apparatus is connected when it is determined that the image sensing apparatus is connected to the connector;
- connecting one of said plurality of connectors to image processing apparatus;
- 20 setting a signal processing corresponding to the connected connector and the stored attribute of an image sensing apparatus;
- inputting an image signal from the image sensing apparatus to the image processing apparatus; and
- 25 performing the signal processing set at said setting step on the input image signal.

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35. An image processing method using an image processing apparatus having a plurality of connectors capable of connecting to a plurality of image sensing apparatuses, said method comprising the steps of:
- 5 designating a connector to be connected to the image processing apparatus;
- connecting one of said plurality of connectors to image processing apparatus in accordance with the
- 10 received designation;
- determining whether an image sensing apparatus is connected to or not to the designated connector;
- outputting a signal indicating that no image sensing apparatus is connected to the designated
- 15 connector when it is determined that no image sensing apparatus is connected;
- outputting an attribute of the image sensing apparatus connected the designated connector when it is determined that an image sensing apparatus is connected
- 20 to the designated connector;
- setting a signal processing corresponding to the attribute of the image sensing apparatus;
- inputting an image signal from the image sensing apparatus to the image processing apparatus; and
- 25 performing the signal processing set at said setting step on the input image signal.